

Claims

- [1] 1. A CMP abrasive comprising:
a ceria slurry; and
a chemical additive having two or more functional groups by mixing and synthesizing a polymeric molecule
and a monomer .
- [2] 2. A CMP abrasive as defined in claim 1, wherein said ceria slurry comprises ceria powder, water and negative-ion-based polymeric compound and conforms to a Newtonian viscosity behavior.
- [3] 3. A CMP abrasive as defined in claim 2, wherein said negative-ion-based polymeric compound is selected from the group consisting of polymethacrylic acid, ammonium polymethacrylate, polycarboxylate and carboxyle-acryl polymer.
- [4] 4. A CMP abrasive as defined in claim 1 or 2, wherein in said chemical additive, said polymeric molecule is polyacrylic acid (PAA), and said monomer is selected from the group consisting of acrylamide, methacrylamide and ethyl-methacrylamide.
- [5] 5. A CMP abrasive as defined in claim 4, wherein mixing ratio of said slurry to said chemical additive is 1:1.
- [6] 6. A CMP abrasive as defined in claim 1 or 2, wherein in said chemical additive, said polymeric molecule is polyacrylic acid (PAA), and said monomer is vinylpyridine or vinylpyrrolidone.
- [7] 7. A CMP abrasive as defined in claim 6, wherein mixing ratio of said slurry to said chemical additive is 1:1.
- [8] 8. A CMP abrasive as defined in claim 1 or 2, wherein in said chemical additive, said polymeric molecule is alkyl methacrylate, and said monomer is selected from the group consisting of acrylamide, methacrylamide and ethyl-methacrylamide.
- [9] 9. A CMP abrasive as defined in claim 8, wherein mixing ratio of said slurry to said chemical additive is 1:1.
- [10] 10. A CMP abrasive as defined in claim 1 or 2, wherein in said chemical additive, said polymeric molecule is alkyl methacrylate, and said monomer is vinylpyridine or vinylpyrrolidone.
- [11] 11. A CMP abrasive as defined in claim 10, wherein mixing ratio of said slurry

to said chemical additive is 1:1.

- [12] 12. A method for manufacturing CMP abrasive comprising steps of:
providing a ceria slurry;
manufacturing a chemical additive having two or more functional groups by
mixing and synthesizing a polymeric molecule and a monomer in a reactor; and
mixing said slurry and said chemical additive.
- [13] 13. A method for manufacturing CMP abrasive as defined in claim 12, wherein
said step of providing a ceria slurry comprising steps of:
manufacturing ceria by solid-phase synthesis;
mixing said ceria with water;
milling said mixture with a high energy attrition mill;
dispersing said milled resultant with a high pressure dispersion apparatus; and
dispersion stabilizing said dispersed resultant by adding negative-ion-based
polymeric compound.
- [14] 14. A method for manufacturing CMP abrasive as defined in claim 13, wherein
said negative-ion-based polymeric compound is selected from the group
consisting of polymethacrylic acid, ammonium polymethacrylate, poly-
carboxylate, and carboxyle-acryl polymer.
- [15] 15. A method for manufacturing CMP abrasive as defined in claim 13 or 14,
wherein said negative-ion-based polymeric compound of 0.0001 ~ 10% by
weight is added.
- [16] 16. A method for manufacturing CMP abrasive as defined in claim 13, after said
step of dispersion stabilizing, further comprising a step of removing large
particles with a filter.
- [17] 17. A method for manufacturing CMP abrasive as defined in claim 12 or 13,
wherein the molecular weight of the polymeric molecule is 2,000 ~ 1,000,000.
- [18] 18. A method for manufacturing CMP abrasive as defined in claim 12 or 13,
wherein said step of manufacturing the chemical additive further comprises a
step of adding further solvent to the synthesized chemical additive.
- [19] 19. A method for manufacturing CMP abrasive as defined in claim 18, wherein
said step of adding further solvent causes the synthesized chemical additive to be
0.03 ~ 10% by weight.
- [20] 20. A method for manufacturing CMP abrasive as defined in claim 12 or 13,
wherein in said chemical additive, said polymeric molecule is polyacrylic acid
(PAA) or alkyl methacrylate, and said monomer is selected from the group

consisting of acrylamide, methacrylamide, ethyl-methacrylamide, vinylpyridine, and vinylpyrrolidone.

- [21] 21. A method for manufacturing CMP abrasive as defined in claim 20, wherein the mixing ratio of said slurry to said chemical additive is 1:1.